

## Description

# [Object Approaching Detection Anti-Blind E-Mirrors System]

### CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This invention relates to create a new form of motor vehicle driving safety view device, called Object Approaching Detection Anti-Blind E-Mirrors System. This e-Mirrors system upgrades safety view mirrors from glass reflective type to optoelectronic type. Attempt to reduce traffic accidents every year, causing by driver's "did not see it" error.

### BACKGROUND OF INVENTION

[0002] Countless traffic accidents in the past related to insufficient safety views: Backing up at blind rear views then ran over children ; Pull out from parking lot too quick and hit up coming vehicle or side walk people; Quick changing lanes on freeway without aware a hidden vehicle or motorcycle at the side;; Tow truck sweep the trailer while passing over without seeing small vehicle at the side; Sharp braking on freeway to avoid something at front

without seeing other vehicle following to close, then collisions happen. Because driver's "did not see it ! ".

[0003] How can we let a driver see the back and the side clearly and let the driver view the proximity between any approaching object to your vehicle ? So to avoid this type of driver's "did not see it ! " traffic accident ? The answer is Yes ! our optoelectronic e-Mirrors which is cost less than those airbags in your car, but will be the most effective to your driving safety , so to lower your everyday driving risk, and let you stress free, have more fun on driving . Drivers will really miss it after your first try on it, no matter what type of vehicle. ( See all 12 pages figures )

[0004] The senior inventor, Mr. Raymond Spykerman had foreseen the "Must Need "of car rear safety views electronic mirrors system many years ago. It should be mandatory use in any automobile in the future. After many years hard working, his dream coming true. we present it here to benefit to our society. He points out at follow that how this invention so handy useful, and how it benefits every driver like you:

[0005] Why do vehicles have a reverse gear when you can't see to back up.???

[0006] Be safe and see all behind you by looking forward.

- [0007] Stop killing small children you can't when you back up.
- [0008] Got a stiff neck, don't worry. Look forward and see back.
- [0009] In a parking space with large vehicles beside you. Can't see before you back over half way out ? Look forward and see back.
- [0010] Back up safely by looking at the monitor in front of you.
- [0011] Now you have eyes in the back of your head. Lucky you !
- [0012] Anti-blind view camera's are needed more than air bags or seat belts.
- [0013] you use them all the time. Not just in emergencies
- [0014] Back up safely, change lane safely, No more guessing !
- [0015] Be a responsible driver. Don't back up blind. Don't change lane blind !
- [0016] See all, know when it is safe to change lane or to back up.
- [0017] Airbags and seat belts and are required. Most drivers never use them.
- [0018] Rear view & side view cameras use all the time, airbags never deploy to good drivers

## **SUMMARY OF INVENTION**

- [0019] The e-Mirrors system is integrated with night vision capa-

ble multi micro CCD cameras, high definition low distortion Lens, multiple mini LCD Panels, and creative concept design title-able camera mounts. Micro cameras are mounted on specific points to get the best proximity views of approaching object or vehicles. It creates safety views to clear off blinds spots areas that conventional reflective mirrors remain. The e-Mirrors system promotes new standard safety view device by upgrading optical to optoelectronic. The e-Mirrors system significantly enhances driving safety in more & more crowded traffic environment since the rapid growth of the population.

[0020] Each component of the e-Mirrors system applies unique design and techniques, such as full 180° rear view dual camera rear setting ; license plate on frame stereo mount ; High definition, low distortion; large iris high bright optical lens & super night vision; day & night high tolerant luminous auto-adjustment 6<sup>th</sup> generation DSP driving chip; single panel multi screen LCD with rear / side view auto switch control; quick surface mounts without cutting or hurting any luxury cars finish ; micro water proof micro camera housing; low air-drag mounts etc. All these lead it reaches the state of the art, matchless. After tested in many vehicles, The e-mirrors system is proof the most

practical design for next generation vehicle driving safety device. It's more over the invention of airbag.

#### **BRIEF DESCRIPTION OF DRAWINGS**

- [0021] There are 12 pages of drawings and figures illustrated how the e-Mirrors system work.
- [0022] Page title of drawings & figures
- [0023] P1 Driver s Blind View Spots
- [0024] P2 Driver's Other Blind Spots & Problems of Single Rear View Camera
- [0025] P3 Optoelectronic CCD Cameras Eyes & Lens
- [0026] P4 On Dashboard Mount Dual LCD Screen e-Mirrors
- [0027] P5. License Plate L-R Stereo Mount Camera Technique
- [0028] P6. Dual Cameras Rear Object Detection Technique
- [0029] P7. Better Proximity Detection Rear Corner Mount Technique
- [0030] P8. Object Approaching Detection At Blind Spot
- [0031] P9. Front Corner Hood Edge Side Mount Technique
- [0032] P10. Truck & Bus e-Mirrors Setting
- [0033] P11. Panoramic High Safety Views for Mission Vehicles

[0034] P12. Multi-Cameras, LCD e-Mirrors & Quad Video Processor Configurations

[0035] The inventor, Romeo Linn, tries to illustrate as details as possible by using photos, CAD drawing and VR 3D rendering. If you are interested in more information of the e-Mirrors system, and want to see all color pictures, please check [www.CenturyInventions.com](http://www.CenturyInventions.com) .

### **DETAILED DESCRIPTION**

[0036] Countless traffic accidents related to the driver's "Did not see it !" errors, because of the blind spots existing in all regular glass reflective mirrors. It's time to find out what problems and shortages in conventional 40 years old optical reflective mirrors .

[0037] 1) Glass reflective character make it narrow viewing angles. no way to eliminate side blind spots

[0038] 2) Glass mirrors are not flexible to mounts anywhere of the vehicle, But only driver's front visible field. No mirror mounted in the back

[0039] 3) Mirror can not be mounted more than 6 feet away from the driver. Or image would be too small to make attention.

[0040] 4) Mirrors are NOT able to reflect the proximity view of an approaching vehicle ( or sidewalk people, or other objects

) away from your vehicle. ( see P1, P2 figures)

[0041] Even though some convex type of side mirrors can be used to reflect the driver's blind spot, however the passenger side mirror image is too small and too far away from driver to make him pay attention.

[0042] Optical reflective mirrors are no way to eliminate all these problem, and are obviously not able to meet the need of higher standard driving safety view for all motor vehicles driving in more and more crowded traffic routes system due to the rapid growth of population. What is more ? Massive diversity design large motor vehicles are made in the millennium new century. They need better safety view mirrors. No need to mention the need of mission vehicles for higher standard panoramic safety views.

[0043] Time to create better driving safety view using different method !

[0044] Thanks for the technology development of small high resolution color LCD display. And the evolution of high performance micro CCD cameras. They are all available and affordable in the resent 3 years.( compare to over 60 years automobile history ) .This makes optoelectronic e-vision technology for driving safety possible, and affordable !

[0045] Before we go into detail of the e-Mirrors system, let's see some existing safety view optoelectronic devices. They usually apply single camera + single display configuration. Will check if this type of devices work well ?

[0046] A typical single rear view camera safety view device. ( see P2 figure 2C, 2D )

[0047] 1) There are still blind spot at both side corners.

[0048] 2) Using fish eye lens camera to cover the whole rear view field. Heavy convex outward distortion happen.

[0049] 3) Fish eye lens shrink the rear vehicle image size too small to match with size of images in side mirrors or center mirror.

[0050] 4) Single camera shows straight back view. Not able to view the proximity. Driver still need to guess the proximity to avoid hitting a rear object.

[0051] Conclusion : Single rear view camera and display setting doest not do the exact jobs that we want.

[0052] Introduction to a new standard driving safety view e-Mirrors system using multiple optoelectronic is. It integrates with night vision capable multi micro CCD cameras + high definition low distortion board Lens + high resolution multi- small LCD panels + angle title-able special design camera mounts all together. The detail of this de-



vice has been illustrated in the 12 pages of figures. ( please skim all 12 pages figures )

[0053] So far, almost all of large vehicles, like container trucks, tow trucks, gas tank tow truck and buses are not able to view the back due to no center rear mirror. Large vehicle drivers have high stress to operate their truck. Driving is not fun.

[0054] The e-Mirrors system revolutionary enhance the viewing capability for motor vehicles driving safety, cause able to view the proximity of approaching vehicle. With this e-mirrors system, drivers get "more eyes on their head". A blind handicap personal has a safety pressure to walk across a traffic intersection, but a normal good vision person just feel free to walk across the risky intersection. So do drivers, they will be stress free while "more eyes on their head". No more blind driving, nor guessing driving. They will feel driving more fun and relax.

[0055] With the help of this e-Mirrors system, traffic accidents , causing by "did not see it "error, will be significantly reduced. The total lost of lives and properties will be significantly reduced. It" s deserve to say : "This is more over the invention of airbag ! "since airbag is the last chance to save life after the collision. But it dose not prevent or to

reduce traffic accident chances. It reduce only the lost of lives after. Airbags never deploy unless deadly accident happen. Good drivers will never see it open, but still pay it for big \$.

[0056] Nowadays, airbag is set as legal device for all vehicles. When this handy e-mirrors system can be a second legal safety device for all vehicles ?